

# Division of Molecular and Cellular Biosciences (MCB)

Virtual Office Hours

Welcome!

We will begin at 2pm ET



# Questions and Answers

Submit your questions via the Q&A box on your screen

- You may elect to submit your question anonymously.
- For specific questions about your project, please contact a Program Director.

**Next MCB Virtual Office Hour**

August 9<sup>th</sup>, 2023: Graduate Research Fellowship Program (GRFP)



# MCB Virtual Office Hour

**Today's Topic:**

## Major Research Instrumentation Program

**NSF 23-519**

**Rob Fleischmann (DBI/BIO)**

**Slides and recordings of past presentations at**

<https://mcbblog.nsfbio.com/office-hours/2/>

(Example: April 12, 2023 – How to Write a Great NSF Proposal)





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## *Major Research Instrumentation (MRI)*

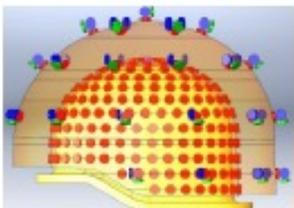
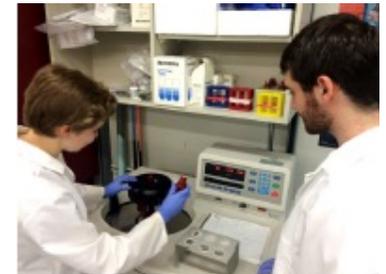
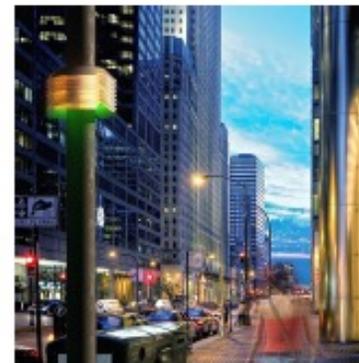
### MCB VOH

July 10, 2023

Dr. Robert Fleischmann

BIO/DBI

[rfleisch@nsf.gov](mailto:rfleisch@nsf.gov)





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# ***MRI Part I***

## ***The Basics***





# ***MRI***

## ***Strategic Goals***

Supports the ***acquisition*** or ***development*** of a *major shared-use research instrument* that is, in general, *too costly or not appropriate* for support through other NSF programs. The instrument is expected to be *operational for regular research* use by the end of the award period.

**AND**

Enables academic departments, disciplinary & cross-disciplinary units, and multi-organization collaborations to integrate research with ***research training***



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# ***MRI***

***The solicitation beginning with the FY 2023  
MRI Competition (NSF 23-519)  
has Some Significant Changes wrt Previous  
Years***

- ***Proposals will be due by 5:00 p.m. local submitters time November 15, 2023.***
- ***PAPPG: NSF 23-1 applies for proposals submitted or due on or after January 30, 2023.***



# ***MRI***

## ***Submission Window Planning***

- ***October 16, 2023 - November 15, 2023***  
October 15, 2024 - November 15, 2024  
October 15, 2025 - November 14, 2025  
October 15, 2026 - November 16, 2026

***Note the transition to new submission windows (deadlines) begins with the Fall, 2023 competition!***



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# **MRI**

## ***The CHIPS and Science Act of 2022***

*The "Creating Helpful Incentives to Produce Semiconductors (CHIPS) and Science Act of 2022", waives cost-sharing requirements for the MRI Program for a period of 5 years. NSF is implementing the waiver for new submissions beginning with the FY 2023 MRI competition.*

*The maximum MRI request from NSF remains \$4 million. Since voluntary cost sharing is not permitted, the maximum total project cost of proposed projects is also \$4 million.*



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# **MRI**

## ***He conservation and Microelectronics***

*A new track has been added ("Track 3") to incorporate opportunities, consistent with the "CHIPS and Science Act of 2022", for proposal requests that include the acquisition, development, installation, operation, and maintenance of equipment and instrumentation to reduce consumption of helium.*

*Consistent with guidance in the "CHIPS and Science Act of 2022", MRI encourages instrument proposals that facilitate U.S. leadership in microelectronics research and training.*



# *MRI*

## *Revised Tracks and Submission Limits*

- **Track 1:** MRI proposals that request funds from NSF greater than \$100,000<sup>[1]</sup> and less than \$1,400,000.
- **Track 2:** MRI proposals that request funds from NSF greater than or equal to \$1,400,000 up to and including \$4,000,000.
- **Track 3:** MRI proposals that request funds from NSF greater than or equal to \$100,000<sup>1</sup> and less than or equal to \$4,000,000 that include the development, purchase, installation, operation, & maintenance of equipment and instrumentation to conserve or reduce consumption of helium.

[1]Track 1 proposals requesting funds from NSF less than \$100,000 will be accepted only from: a) eligible performing organizations requesting instrumentation supporting research in the disciplines of mathematics or social, behavioral and economic sciences; or b) non-Ph.D.-granting institutions of higher education requesting instrumentation supporting research in any NSF-supported disciplines.



# **MRI**

## ***Revised Tracks and Submission Limits***

Each performing organization may submit in *revised "Tracks"* with no more than two (2) submissions in Track 1 and no more than one (1) submission in Track 2. For the newly defined Track 3, no more than one (1) submission per competition is permitted.

***As a result, it is now possible for an institution to submit up to four MRI proposals within the Track limits as described above.***



## ***MRI: Classification of Organizations***

- **Ph.D. granting institutions of higher education** are accredited colleges and universities that have awarded more than 20 Ph.D.s or D.Sci.s in all NSF-supported fields during the combined previous two academic years. Additionally, any organization that awards Ph.D. or D.Sci. in NSF-supported fields is considered to be a Ph.D.-granting institution if the only degrees it awards in NSF-supported fields are post-Bachelor's degrees.
- **Non-Ph.D. granting institutions of higher education** are accredited colleges and universities (including two-year community colleges) that award Associate's degrees, Bachelor's degrees, and/or Master's degrees in NSF-supported fields, but have awarded 20 or fewer Ph.D./D.Sci. degrees in all NSF-supported fields during the combined previous two academic years.
- **Non-degree granting organizations** are those that do not award Associate's degrees, Bachelor's degrees, Master's degrees, and/or Ph.D.s or D.Sci.s. Non-degree-granting organizations also include institutions of higher education that award all of their degrees outside of NSF-supported fields.

***Note: Organizations that are not PhD-granting are not necessarily non-PhD-granting!***



## ***Instrument Development***

- *NSF seeks to support MRI awards that develop next-generation research instruments that open new frontiers of research.*
- *Up to one-third of the MRI awards are expected to support instrument development in either of Tracks 1 or 2, and even Track 3.*

***Within their submission limit, organizations are strongly encouraged to submit proposals for innovative development projects.***



## *Reminder*

MRI seeks broad representation of PIs and institutions in its award portfolio, including:

- *Minority-serving institutions*
- *Predominantly undergraduate institutions*
- *Geographically diverse institutions (e.g., in rural areas and EPSCoR jurisdictions)*
- *Under-resourced institutions so that MRI builds capacity for research*

and PIs who are:

- *Women*
- *Early-career researchers*
- *In groups that historically have been marginalized in STEM*
- *Persons with disabilities*



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# ***MRI Part II***

## ***The Review Process***





## ***Proposal Review and Award***

- Proposals submitted to OIA with **\*\*Division(s) preference indicated\*\***.  
→ *OIA responsible for compliance, funds and portfolio monitoring*
- Proposals (mostly) reviewed in division(s) selected by PI. May be co-reviewed. *NSF reserves the right to place proposals in the proper home!*
- Divisions recommend awards (w/ OIA concurrence) and declines.
- MRI funding: OIA holds the MRI budget provided by Congress.
  - Initial funds allocated to Divisions based on proportion of total MRI \$\$ a Division is reviewing. → *Comparable success rate by divisions.*
    - Division funds further siloed by percentage of proposals from a) non-PhD/MSIs and b) PhD/non-degree → *Comparable success rate by institution-type.*
  - Some funds reserved for >\$1 million meritorious Directorate-level priorities → *All Directorates have opportunity to make large (Track 2) awards.*
  - *OIA holds a reserve for portfolio balance; some Divisions use their own program funds to support MRI; EPSCoR also contributes \$\$.*



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# ***MRI Part III: Proposal “Best” Practices***





## ***Understand NSF before Considering a Proposal!***

- Know the NSF Website ([www.nsf.gov](http://www.nsf.gov))
- Search Recent Awards ([www.nsf.gov/awardsearch](http://www.nsf.gov/awardsearch)). Use Program Element 1189 (for MRI)
- Identify appropriate programs ([www.nsf.gov/funding](http://www.nsf.gov/funding) or links within <https://nsf.gov/staff/orglist.jsp>)
- Talk to Program Officers in Divisions where you fit
- Know the “Proposal and Award Policies and Procedures Guide” ([http://www.nsf.gov/publications/pub\\_summ.jsp?ods\\_key=papp](http://www.nsf.gov/publications/pub_summ.jsp?ods_key=papp))
- Serve as a panelist!
- Talk to successful PIs
- Know NSF’s role compared to other Federal agencies



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# ***MRI Proposals***

***So, what makes an MRI proposal competitive?***

***Note the term “competitive”, rather than “successful”!***

***Due (in part) to budget limitations, only a limited fraction of submitted proposals are funded***

***Not all strong proposals get funded***



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# ***MRI Proposals***

## ***Think like a reviewer!***

- *What “story” would you want to hear?  
**Science drives the request!***
- *If you wonder if reviewers will have a concern, almost certainly they will!*
- *MRI, like other grants programs, is a competition – what makes your proposal stand out?*



# ***MRI Proposals***

## ***So what makes an MRI proposal competitive?***

### **Build your case on its merits**

What is the intellectual merit of the proposed activity?

What are the broader impacts of the proposed activity?

- Describe (enthusiastically) *compelling* research / research training activities to be undertaken with the instrument. *Buy/Build it and they will come is a lackluster reason...*
- Demonstrate how your activities will make meaningful contributions within and across disciplines in both *research* and *research training*. *We are the ones best able/positioned to do this work!*
- Establishing a *need* is usually not enough. Everyone needs the best instrument. *What makes you unique?*
- Match your proposed effort to the mission of your institution and describe it in that context. *You are competing against your peer institutions, and MRI awards build institutional capacity...*



# ***MRI Proposals***

- Demonstrate appropriate leadership and commitment to make the project a success. *Being a good research scientist is one thing, being a good manager is quite another.*
- How would the project enable the integration of research and education? *MRI is a Research **and** Research Training program. (Education and Outreach are broader impacts.)*
- How would the project enable integrating diversity into NSF programs, projects, and activities? *Saying it will is not enough!*
- Ask for what you need, no more no less. *Bells and whistles are nice, but may be a minor part of the project...*
- Avoiding pitfalls (*i.e.*, “Don’t Do This”) will **not** guarantee a competitive proposal. *So, your proposal is technically flawless, but is it compelling?*

***There is a vast range of possible approaches, strategies, and designs for your proposal.***

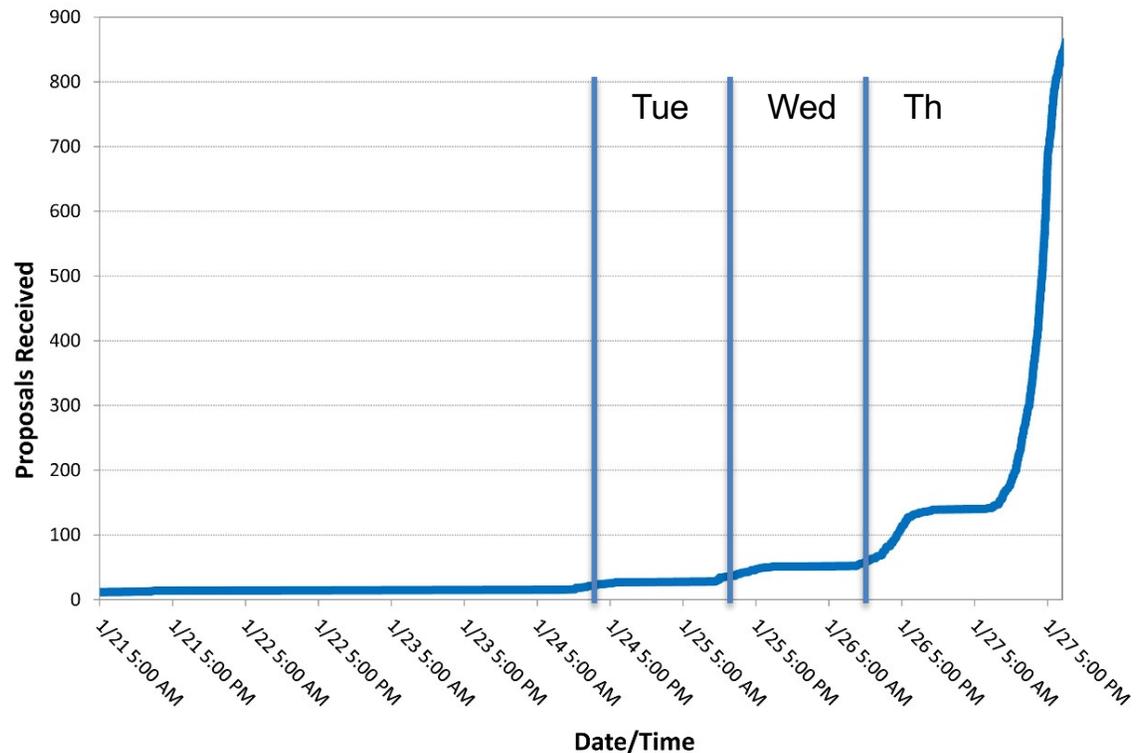


# Important Takeaway

***Soapbox: Submit early and check that what was received at NSF is what you intended to submit!***

***FY2011 MRI Proposal Deadline: 01/27/2011, 5 PM Local Time***

*You can always revise and resubmit proposals prior to the deadline, but not afterwards! 80% of proposals are submitted on the deadline day, 50% within 2 hours of the 5pm deadline!*





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*Thank You!*

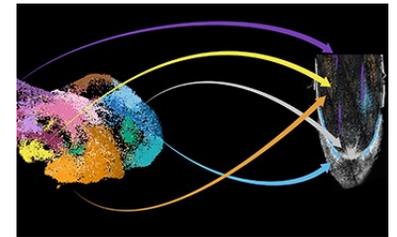


Funding  
Opportunity

Dear Colleague Letter: [NSF 23-121](#)

# Tool Development for Molecular and Cell Biology (Tools4Cells)

Support for proposals to develop **novel tools and methods** that **measure, analyze, manipulate, or control critical aspects of cellular properties and functions** in order to continue to push boundaries and **open new avenues of inquiry** in molecular and cellular biosciences.



*Credit: Bruno Guillotin/Ramin Rahni*

Proposals can be submitted to:

- **MCB:** Any of the [Core programs](#) (full proposal or EAGER).  
*Note:* Project must address an important research question or hypothesis.
- **DBI:** Infrastructure Innovation for Biological Research/[Innovation](#) program (full proposal).  
*Note:* Project must address an important, broadly generalizable question, and must present clear advancement over currently available tools/methods.
- **No deadline** for proposal submission.
- **Virtual office hour** on [October 11, 2023, 2-3 pm.](#)



# Next MCB Virtual Office Hour

- Wednesday August 9<sup>th</sup>, 2023, 2-3 pm ET  
**Graduate Research Fellowship Program (GRFP)**

## All BIO Divisions host monthly VOH

Biological Infrastructure: 3<sup>rd</sup> Tuesday (3-4 pm)

Environmental Biology: 2<sup>nd</sup> Monday (1-2 pm)

Integrative Organismal Systems: 3<sup>rd</sup> Thursday (1-2 pm)

Molecular and Cellular Biosciences: 2<sup>nd</sup> Wednesday (2-3 pm)



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